

CLAIMS:

1. A method of making a microelectronic package, comprising:

a) folding a substrate for accepting a microelectronic element in a first portion, said substrate having at least one folding portion, said folding including engaging the substrate with a die having an engagement surface so that said at least one folding portion of said substrate pivots with respect to said first portion about an axis between said first portion and said folding portion.

2. The method of claim 1, wherein said substrate has a first end, a second end, and a central portion between said first end and said second end, said substrate carrying a microelectronic element in said central portion, said folding portion comprising said first end and said second end of said substrate.

3. The method of claim 2, wherein, before folding, said substrate is arranged so that said first end extends horizontally away from the microelectronic element on one side of the microelectronic element and said second end extends horizontally away from the microelectronic element on an opposite side of the microelectronic element.

4. The method of claim 3, wherein said die comprises a first part and a second part and said step of engaging said substrate comprises engaging said first end with said first part and engaging said second end with said second part.

5. The method of claim 4, wherein said first part and second part cooperatively define said engagement surface and are advanced toward the microelectronic element so that said first end and said second end follow said engagement surface of said die and then travel back over the microelectronic element as said die advances.

6. The method of claim 4, wherein said first part includes a first end surface and said second part

includes a second end surface wherein said first part and said second part each engage an end of the substrate and are brought together until said first and second end surfaces of each part engage one another.

7. The method of claim 4, wherein, after said step of folding, said first end and second end are disposed on an upper side of the package.

8. The method of claim 7, further including a plurality of connection terminals, wherein said plurality of connection terminals are disposed at said first end and said second end and further comprising attaching a first microelectronic part to said plurality of connection terminals disposed at said first end and a second microelectronic part to said plurality of connection terminals at said second end.

9. The method of claim 1, wherein said substrate carries a microelectronic element at a first end of said substrate and said folding portion comprises a second end, said second end of said substrate being opposite said first end.

10. The method of claim 9, wherein, before said step of folding, said substrate is arranged so that said second end extends horizontally away from said microelectronic element on one side and said engagement surface engages said second end of said substrate.

11. The method of claim 10, wherein said die advances toward said microelectronic element so that said second end follows said engagement surface and travels back over said microelectronic element as said die advances.

12. The method of claim 10, wherein, after said step of folding, said second end is disposed on an upper side of the package.

13. The method of claim 12, wherein said substrate has connection terminals at said second end and

further comprising attaching a microelectronic part to said connection terminals.

14. The method of claim 1, wherein said substrate comprises mounting terminals and connection terminals.

15. The method of claim 14, wherein said mounting terminals are formed in a mounting portion of said substrate for mounting the microelectronic package with other elements and said connection terminals are formed in said folding portion of said substrate.

16. The method of claim 15, wherein said mounting portion is coextensive with said first portion.

17. The method of claim 1, wherein said substrate carries a microelectronic element in said first portion of said substrate.

18. The method of claim 17, wherein said substrate is engaged by said die so that said substrate moves into a position overlying said microelectronic element.

19. The method of claim 17, wherein said substrate includes mounting terminals and connection terminals exposed at an external surface of said substrate.

20. The method of claim 19, wherein said step of folding is performed so that said external surface in said folding portion faces upwardly, at an upper end of the microelectronic package.

21. The method of claim 20, further comprising connecting a further microelectronic part to said connection terminals.

22. The method of claim 21, wherein said step of folding is performed so that said external surface in the folding portion of said substrate faces downwardly, at a lower end of the microelectronic package.

23. The method of claim 22, further comprising connecting a circuit panel to said mounting terminals.

24. The method of claim 1, wherein said substrate includes an internal surface further comprising attaching the microelectronic element to said internal surface of said substrate.

25. The method of claim 24, wherein the microelectronic element comprises a top surface and further comprising adhering said folding portion of said substrate to said top surface during or after said step of engaging.

26. The method of claim 14, wherein said substrate comprises a dielectric layer with a plurality of traces connected to a plurality of connection pads.

27. The method of claim 26, wherein at least some of said plurality of traces extend from said plurality of connection pads to said connection terminals and at least some of said plurality of traces extend from said plurality of connection pads to said mounting terminals.

28. The method of claim 26, wherein at least some of said plurality of traces extends from said connection terminals to said mounting terminals.

29. The method of claim 26, wherein said plurality of connection pads are connected to a plurality of contacts of said microelectronic element.

30. The method of claim 26, further comprising providing an adhesive layer on said substrate, the adhesive layer having apertures and attaching said adhesive layer with said dielectric layer so that said plurality of connection pads are aligned with said apertures.

31. The method of claim 30, further comprising attaching said microelectronic element having a plurality of contacts to said adhesive layer so that said microelectronic element is disposed in said first portion and said plurality of contacts face away from said adhesive layer.

32. The method of claim 31, further comprising attaching wire bonding wires to said plurality of contacts and to said plurality of connection pads.

33. The method of claim 1, wherein said die comprises a first part and a second part, said first and second parts defining an opening and wherein said substrate is advanced into said opening.

34. The method of claim 33, wherein said folding portion pivots as said substrate is advanced into said opening.

35. The method of claim 34, wherein said die comprises a third part, wherein said third part engages said folding portion, moving said folding portion downwardly onto a top surface of said microelectronic element.

36. The method of claim 35, wherein said third part moves downwardly with respect to said substrate to engage said folding portion.

37. The method of claim 36, wherein said third part moves inwardly with respect to said first portion to engage said folding portion.

38. The method of claim 1, wherein said engagement surface of said die is shaped so as to correspond to a final desired shape for the microelectronic package.

39. The method of claim 1, wherein said engagement surface of said die is sized so as to determine a final desired size for the microelectronic package.

40. The method of claim 1, wherein said step of folding comprises engaging said substrate with said die more than once.

41. The method of claim 1, wherein said step of folding comprises engaging said substrate with a plurality of dies, each of said plurality of dies comprising a differently shaped engagement surface than the other of said plurality of dies.

42. The method of claim 1, wherein said step of folding includes moving said die in more than one direction.

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